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EXAMINER

POON, KING Y

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/420,777

Applicant(s)

MOREAU ET AL.

Examiner

King Y. Poon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-68 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. Declaration and power of attorney filed on 12/16/1999 has been received.

Specification

2. The abstract of the disclosure is objected to because it has more than one paragraphs and the title is in the abstract. Correction is required. See MPEP § 608.01(b).

Claim Objections

3. Claim 49 is objected to because of the following informalities: "said reservoir" has not appeared earlier in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Regarding claims 1, 15: Claims 1, 15 recite the limitation "so-called switch on pixels". There is insufficient antecedent basis for this limitation in the claim.

It is unclear whether the so-called switch on pixels is the switched pixels or other pixels that are not a switch on pixels but being called as a switch on pixels

Regarding claim 4: Claim 4 recites the limitation "said table" in line 4. There is insufficient antecedent basis for this limitation in the claim.

It is unclear whether the "said table" is referring to the table of claim 1 or the enlarged table in claim 4.

Regarding claims 5, 19, 44, 60: Claims 5, 19 recite the limitation "a manner known per se". There is insufficient antecedent basis for this limitation in the claim.

It is unclear whether the manner known per se is the manner known by the applicant or the manner known by other persons.

Regarding claims 8, 22, 29, 47, 50, 63: the phrase "such as, for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 18: Claims 18 recites the limitation "said table" in line 5. There is insufficient antecedent basis for this limitation in the claim.

It is unclear whether the "said table" is referring to the table of claim 15 or the enlarged table in claim 18.

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6. Claims 66-68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim. It is unclear which part of method 1 or 29 is being included.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 6-15, 20-28, 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Springett (US 5,636,032).

Regarding claim 1: Springett teaches a method of predicting (column 5, lines 25-35) the quantity of a printing product (marking material, column 5, lines 30-35) necessary for printing a document, (job, column 5, line 29, e.g., 16 pages of document, fig. 4), characterized in that it comprises of storing the whole of the document (the pixel map for the document is being sent from a computer, 1, fig. 1, column 5, lines 20-25; inherently, the whole document must be stored or the document data would be lost in the sending process) in the form of digital data, (electronic pixel streams, column 1, line 24) creating, from these data, a table (T) (the pixel map of a single page, fig. 1, column 5, lines 29-30) describing at least part of a monochromatic component (e.g.,

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C, column 6, lines 5-7) of the document, the component corresponding to the printing product (marking material, column 5, lines 30-35) and each cell of the table representing a pixel, (column 5, lines 26-34) counting (6) the number of so-called switched-on pixels in this table and deriving therefrom a necessary quantity (10) of the printing product before (will be printed, column 5, lines 32-34) enabling or demanding the printing.

Regarding claim 6: Springett teaches a calculation step (10) consists of multiplying the number of switched-on pixels by a value (quantity for each pixel, column 3, lines 45-47) representing an elementary quantity of the printing product.

Regarding claim 7: Springett teaches for an inkjet printing system, (column 3, lines 28-30) characterized in that the value represents the value of a droplet of printing product ejected.

Regarding claim 8: Springett teaches, characterized in that the value is preselected according to predetermined parameters, such as, for example, the type of printer (7) and/or the type of cartridge (8) and/or the type of printing product (9). (toner or ink, column 3, lines 44-46)

Regarding claim 9: Springett teaches characterized in that a set of such values is stored (look-up table, column 3, lines 45-48) and in that one of them is selected according to an actual combination of such parameters.

Regarding claim 10: Springett teaches characterized in that the stored document is divided into pages to be printed (2), (fig. 4) in that the aforementioned operations are performed in order to determine the number of switched-on pixels (6) corresponding to each page and in that the

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quantity of printing product or products necessary for printing each page is derived therefrom.

(Fig. 4, column 5, lines 23-35)

Regarding claim 11: Springett teaches characterized in that the necessary quantities of the printing product or products for all the pages are added (job, column 5, line 29, e.g., 16 pages job, fig. 4).

Regarding claim 12: Springett teaches characterized in that it consists of producing an item of information (fig. 2, fig. 4) which can be used by a user from the determined necessary printing product quantity or quantities.

Regarding claim 13: Springett teaches characterized in that it is implemented in a computer (20) connected to a printer (210) (the network system of a computer connected to a printer, column 5, lines 20-23).

Regarding claim 14: Springett teaches characterized in that it is implemented in a computer connected by network (400) to another computer connected to a printer (the network system of a computer connected to a printer and other network citizen, column 5, lines 20-23; since Springett teaches network citizen consists of at least a printer and a computer, other network citizen, column 5, line 22, that is not the originating computer, consist of at least another computer).

Regarding claim 15: Springett teaches device (fig. 1) for predicting (column 5, lines 25-35) the quantity of a printing product (marking material, column 5, lines 30-35) necessary for printing a document, (job, column 5, line 29; e.g., 16 pages of document, fig. 4) characterized in

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that it has means for storing the whole of the document (the pixel map for the document is being sent from a computer, 1, fig. 1, column 5, lines 20-25; inherently, the whole document must be stored or the document data would be lost in the sending process, the memory used to stored the document data is the means for storing) in the form of digital data, (electronic pixel streams, column 1, line 24) means for creating, (the means that separate the document into page data, such that a pixel map of a page can be recognized) from these data, a table (the pixel map of a single page, fig. 1, column 5, lines 29-30) describing at least part of a monochromatic component (e.g., C, column 6, lines 5-7) of the document, the component corresponding to the printing product (marking material, column 5, lines 30-35) and each cell in the table representing a pixel, (column 5, lines 26-34) means (5, fig. 1, 103, fig. 3) for counting (6) the number of so-called switched-on pixels in this table and means (7, fig. 1, 105, fig. 3) for deriving therefrom a necessary quantity (10) of the printing product before (will be printed, column 5, lines 32-34) enabling or demanding the printing.

Regarding claim 20: Springett teaches calculation means (the device that calculates the toner usage by using the quantity of toner per pixel and the total number of pixels, column 3, lines 44-50) for multiplying the number of switched-on pixels by a value representing an elementary quantity of the printing product.

Regarding claim 21: Springett teaches for an inkjet printing system, (column 3, lines 28-30) characterized in that the value represents the volume of a droplet of ejected printing product.

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Regarding claim 22: Springett teaches means for preselecting (the device that selects the correct value from the look up table, column 3, lines 45-50) the value as a function of predetermined parameters, (column 3, lines 40-50) such as, for example, the type of printer (7) and/or the type of cartridge (8) and/or the type of printing product (9).

Regarding claim 23: Springett teaches storage means (look up table, column 3, line 47) for storing a set of such values and means (the device that selects the correct value from the look up table, column 3, lines 45-50) for selecting one of them according to an actual combination of such parameters. (column 3, lines 40-50)

Regarding claim 24: Springett teaches means (the device that recognized a page from the document data 16, pages of fig. 2, fig. 4) for dividing the stored document into pages to be printed (2), means (103, fig. 3, 5, fig. 1) for determining the number of switched-on pixels (6) corresponding to each page and means (7, fig. 1, 105, fig. 3) for deriving therefrom the quantity of printing product or products necessary for printing each page.

Regarding claim 25: Springett means (120) (105, fig. 3) for adding the necessary quantities of printing product or products for all the pages. (Job, 16, pages column 5, line 29, fig. 4)

Regarding claim 26: Springett teaches means for producing an item of information (device that generates the display of fig. 4, and fig. 2, column 5, lines 20-24) which can be used by a user from the determined necessary printing product quantity or quantities.

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Regarding claim 27: Springett teaches the device has a computer (20) and a printer (210).
(column 5, lines 20-23)

Regarding claim 28: Springett teaches the device has a computer connected by network (400) to another computer connected to a printer (the network system of a computer connected to a printer and other network citizen, column 5, lines 20-23; since Springett teaches network citizen consists of at least a printer and a computer, other network citizen, column 5, line 22, that is not the originating computer, consist of at least another computer).

Regarding claim 49: Springett teaches the measurement or measurements of a quantity of product actually available consist of arranging a capacitive branch (the memory used to save the balance of a toner cartridge, column 1, lines 34-40) including the reservoir (312x, 312d), (cartridge, column 1, lines 34-35) applying an alternating signal (the fetch and save signal to the memory, fig. 6, US 4,961,088, incorporated by reference, column 1, lines 15-25, Springett) to this capacitive branch and analyzing a resulting signal (315)(new cartridge print count, fig. 6, US 4,961,088) in order to derive therefrom the quantity of printing product actually available.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2, 3, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Springett (US 5,636,032) as applied to claims 1, 15 above, and further in view of Oh (US 5,729,351).

Regarding claim 2: Springett teaches an aforementioned table (T) (pixel map for a page, fig. 1, column 5, lines 29-30) is created with limited capacity, (page) less than the capacity necessary for describing the monochromatic component of the document, (a document has, e.g., 16 pages, fig. 4)

Springett does not teach in that groups of pixels of the monochromatic component of the document are entered therein successively, in that on each occasion the number of switched-on pixels is counted (6) until all the monochromatic component of the document has been entered in table and its switched-on pixels have been counted.

Oh, in the same area of storing and counting pixel image data, teaches groups of pixels of the monochromatic component of the document are entered in a table (page memory, fig. 3) successively, (A page at a time, fig. 3) in that on each occasion the number of switched-on pixels is counted until all the monochromatic component of the document has been entered in table and its switched-on pixels have been counted. (315, fig. 3)

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Springett's pixel storing and counting method to include: a page memory for storing the table, in that groups of pixels of the monochromatic

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component of the document are entered therein successively, in that on each occasion the number of switched-on pixels is counted until all the monochromatic component of the document has been entered in table and its switched-on pixels have been counted.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Springett's pixel storing and counting method by the teaching of Oh because of the following reasons: (a) it would have prevented the pixel map (table) of a page from being lost before the pixel is being counted; and (b) it would have allowed Springett to recycle the page memory to reduced the memory requirement in the system to reduce cost.

Regarding claim 3: Springett teaches creating each table of limited capacity from digital data representing adjacent bands (page, fig. 4, column 5, lines 29) of the document.

Regarding claim 16: Springett teaches an aforementioned table (pixel map for a page, fig. 1, column 5, lines 29-30) of limited capacity, (page) less than the capacity necessary for describing the monochromatic component of the document, (a document has, e.g., 16 pages, fig. 4)

Springett does not teach means for successively entering therein groups of pixels of the monochromatic component of said document and means for on each occasion counting the number of switched-on pixels until the whole of said monochromatic component of the document has been entered in the table and its switched-on pixels have been counted.

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Oh, in the same area of storing and counting pixel image data, teaches means (program code 313, fig. 3) for successively (a page at a time, fig. 3) entering therein groups of pixels of the monochromatic component of the document in a page memory page and means (program code 315, fig. 3) for on each occasion counting the number of switched-on pixels until the whole of the monochromatic component of the document has been entered in the table and its switched-on pixels have been counted. (Fig. 3)

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Springett's pixel storing and counting device to include: a page memory for storing the table, means for successively entering therein groups of pixels of the monochromatic component of the document, and means for on each occasion counting the number of switched-on pixels until the whole of said monochromatic component of the document has been entered in the table and its switched-on pixels have been counted.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Springett's pixel storing and counting method by the teaching of Oh because of the following reasons: (a) it would have prevented the pixel map (table) of a page from being lost before the pixel is being counted; and (b) it would have allowed Springett to recycle the page memory to reduced the memory requirement in the system to reduce cost.

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Regarding claim 17: Springett teaches means (means for creating the page pixel map for a page, 1, fig. 1; page, fig. 4, column 5, line 29) for creating each table of limited capacity from digital data representing adjacent bands of the document.

11. Claims 66-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Springett (US 5,636,032) in view of well-known prior art.

Regarding claim 66: Springett teaches, a method step of implementing the method according to one of Claims 1 or 29.

Springett does not teach an information storage means for storing the method step.

However, it is well known in the art (official notice) that a method steps to be carried out by hardware circuits would be implemented in a program stored in an information storage means controlling a processor to perform the function of the hardware circuit.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Springett to include: a program for controlling the device of Springett and an information storage means for storing the program step.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Springett because of the following reasons (a) a program is easy to update or replace compare to replacing a hardware circuit; thereby increase system versatility and reduces maintenance cost; and (b) saving the program in storage would have prevented the program from being lost.

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Regarding claim 67: Springett does not teach the storage means is chosen from the group of devices including a magnetic tape, a magnetic diskette, a fixed-memory compact disc and a rewriteable compact disc.

However, it is well known in the art (official notice) that a storage means for storing a program is one of a magnetic tape, a magnetic diskette, a fixed-memory compact disc and a rewriteable compact disc.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Springett to include: the storage means is chosen from the group of devices including a magnetic tape, a magnetic diskette, a fixed-memory compact disc and a rewriteable compact disc.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Springett because of the following reasons (a) using a well-known technique to store the program would have prevented the program from being lost because those well-known devices have proven to be reliable.

Regarding claim 68: A stored program inherently is being read by a computer or a microprocessor.

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Allowable Subject Matter

12. Claims 4, 5, 18, 19, 29-48, 50-65 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4, 18: Claims 4, 18 identify the distinct features of “overlapping broadened bands are selected; using the corresponding digital data, at least one enlarged table is created; allowing an image reprocessing entailing a modification of the switched-on pixels; the table is modified by applying a correction algorithm; and the counting of the switched-on pixels corresponding to the excess part of the enlarged table is excluded.” Springett and Oh, either singularly or in combination, fails to anticipate or render the above limitations obvious to used with other claimed limitations.

Regarding claims 29, 50: Claims 29, 50 identify the distinct features of “method according to claims 1 and 15 for managing printing product resources available in a color printer containing several reservoirs of different printing products, dividing a document stored in the form of digital data, into groups of such data representing pages, seeking a selection of pages which would ensure the exhaustion, at least approximately simultaneously, of at least one group of reservoirs, and at least sending a message or triggering the implementation of a processing, entailing the selected pages.” Springett and Oh, either singularly or in combination, fails to anticipate or render the above limitations obvious to used with other claimed limitations.

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14. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to King Y. Poon whose telephone number is (703) 305-0892.

September 25, 2003

King Yau Poon